

1999 REVISED
Patient Care Procedures

APPROVED DRAFT
12/1/99

Southwest Region EMS and Trauma
Care Council

**SW Region Prehospital Trauma System Activation & Destination
Procedures**

These procedures are based on the triage/assessment of the trauma patient using the State of Washington Prehospital Trauma Triage Destination Procedures.

Airway is of primary concern! If the patient's airway cannot be effectively managed consider rendezvous with ALS or immediate diversion to closest facility able to provide definitive airway management.

Step I Assess Vital Signs and Level of Consciousness:

If any criteria met:

- Immediately notify the highest level trauma center within 30 minute transport time that your patient meets *Trauma System Entry* criteria and begin transport.
- If facility cannot accept your patient (i.e. on divert) immediately divert to the next closest, highest level trauma center. Notify receiving facility that your patient meets *Trauma System Entry* criteria.

Step II Assess Anatomy of Injury:

If any criteria met:

- Immediately notify the highest level trauma center within 30 minute transport time that your patient meets *Trauma System Entry* criteria and begin transport.
- If facility cannot accept your patient (i.e. on divert) immediately divert to the next closest, highest level trauma center. Notify receiving facility that your patient meets *Trauma System Entry* criteria.

Step III Assess Biomechanics of Injury and Other Risk Factors:

If any criteria met:

- Immediately notify the closest trauma center that your patient meets *Trauma System Entry* criteria and begin transport.
- If facility cannot accept your patient (i.e. on divert) immediately divert to the next closest, highest level trauma center. Notify receiving facility that your patient meets *Trauma System Entry* criteria.

For all Trauma System Entry Patients:

- Affix the State of Washington Trauma ID Band to the patient, document the number and submit data (after the incident) to the State.
- Consider activation of an Air Ambulance if it will decrease total out of hospital time to the trauma center by 10 minutes or more.
- If in doubt regarding destination decision, follow local on or off line Medical Control.

DEFINITIONS

Aid Vehicle - a first response, non-transport vehicle that meets the Washington Administrative Code (WAC 246-976) and, in the Southwest Region, one that provides first response emergency medical services 24 hours per day, seven days per week and is recognized as a resource in the Regional EMS and Trauma Plan.

Ambulance - a transport vehicle that meets the Washington Administrative Code (WAC 246-976) for ill and injured patients, and, in the Southwest Region, one that provides emergency medical services 24 hours per day, seven days per week ~~period~~ and is recognized as a resource in the Regional EMS and Trauma Plan.

EMD - means provision of special procedures and trained personnel to ensure the efficient handling of medical emergencies and dispatch of aid. It includes pre arrival instructions for CPR and other verbal aid to callers. (from WAC)

Global Positioning System (GPS) - a satellite based location system for accurately determining the exact latitude and longitude of a particular point on the Earth's surface.

Major Trauma Patient - a patient who meets the Washington State Prehospital Trauma Triage Tool's Step 1 or 2 (physiologic or anatomic) criteria for potentially life threatening injuries.

Medical Control - the on-line and/or off-line direction (protocols) of prehospital EMS providers provided by MPD'S and/or MPD approved physician delegates.

Patient Care Procedures Standard - the expectation set on a regional or statewide basis by which the system will be evaluated.

Patient Care Procedures Purpose - why a procedure covering an area of the EMS and Trauma Care System is necessary.

Patient Care Procedures - written operating guidelines adopted by the regional emergency medical services and trauma care council in accordance with state-wide minimum standards. The patient care procedures shall include: a description of the activation of the trauma system; the level of medical care personnel to be dispatched to an emergency scene; procedures for triage of patients; the level of trauma care facility to first receive the patient; and the name and location of other trauma care facilities to receive the patient should an interfacility transfer be necessary

Patient Care Protocols - standard medical orders developed and adopted by a county Medical Program Director that indicate the type of care to be provided to medical and trauma patients.

Pediatric Major Trauma Patient - a patient who is a major trauma patient estimated to be under the age of 15 years.

Quality Improvement - the process used to evaluate the effectiveness of a procedure in the system and to recommend changes in the implementation process of the Regional Plan and in this procedure as may be indicated.

Trauma System Entry – means a patient who meets the Washington State Prehospital Trauma Triage Tool’s criteria for potentially life threatening injuries.

Trauma Verified Service - a DOH approved and regionally recommended first response or ambulance service that provides twenty-four hour per day emergency medical responses, seven days per week, with response ambulances and/or first response vehicles with personnel trained in emergency care of the trauma patient.

TRIAGE AND TRANSPORT

PURPOSE

The purpose of the Southwest Region Patient Care Procedures (PCPs) is to ensure that the right patient is transported to the right designated medical care facility at the right time. These PCPs are not designed to replace logical or reasonable standards of care that exist within a community, but to help guide and instruct prehospital and trauma designated personnel in the proper systems flow of patients who enter the trauma system in the Southwest Region. Nor are they designed to replace Medical Program Director's Patient Care Protocols or Guidelines that exist in a particular county. They are designed to compliment MPD's protocols and/or guidelines, and direct patient flow in the Southwest Region, ensuring that major trauma patients (and other medical and minor trauma patients) receive the most appropriate care possible. These PCPs should be reviewed by MPDs, Trauma Centers, Verified First Response and Ambulance Services, 9-1-1 Centers, EMS administrators, and the first responders, EMTs, and paramedics who make up the system in the Southwest Region.

STANDARD: THE GOLDEN HOUR

These PCPs were designed:

To provide timely care to all trauma patients so major trauma patients are provided appropriate medical treatment within the "golden hour" of trauma treatment.

To minimize response time in order to get trauma trained personnel to the scene of a major trauma incident as quickly as possible so that major trauma patients are provided appropriate prehospital care within the "golden 10 minutes" of arrival upon the scene.

STANDARDS: GENERAL

All licensed and verified ambulance and aid services shall:

1. Comply with standards outlined in the latest Regional EMS and Trauma Care System Plan, as well as policies, rules, and regulations in the Washington Administrative Code and Revised Codes of Washington, including the Washington Prehospital Trauma Triage Tool (WAC 246-976-390)
2. Transport patients to the most appropriate designated Trauma Center or facility, as outlined in these PCPs.

IDENTIFICATION OF **PREHOSPITAL** MAJOR TRAUMA PATIENTS

Trauma System Entry patients are those who are identified by the initial EMS field assessment using the most current (see attached) copy of the Washington State Prehospital Trauma Triage Tool. Ideally, a paramedic or the highest_level of provider to arrive first at the scene should make the determination as to whether a patient is classified as a Trauma System Entry patient.

When in doubt, err on the side of caution, and assume any trauma patient is a potential Trauma System Entry patient that must be treated at a designated Trauma Center.

DESIGNATED TRAUMA CENTERS - Southwest Region

In the Southwest Region, the following hospitals are Washington designated Trauma Centers:

Southwest Washington Medical Center, Medical Center Campus, Vancouver,
Washington -- Level II
St. John Medical Center, Longview, WA -- Level III
Skyline Hospital, White Salmon, WA -- Level IV
Klickitat Valley Hospital, Goldendale, WA -- Level IV
Ocean Beach Hospital, Ilwaco, WA -- Level IV

(Level I is the highest level of designated Trauma Center in the Regional Trauma System, with in-house trauma care available 24 hours per day. Southwest Washington recognizes Levels I, II, III, IV, and V. A Level V trauma center can provide the least technical care and should be considered as stabilization center only, with the intent of getting a major trauma patient from a Level III, IV or V trauma Center to a Level I or Level II Trauma Center as quickly as the patient is stabilized or is ordered transferred by the lower level designated Trauma Center's medical staff).

In The Southwest Region, the following level I, III and IV hospitals in are recognized as trauma resource hospitals for the Region.

- Providence Hospital	Yakima	Level IV
- Yakima Memorial	Yakima	Level III
- Legacy Emanuel Hospital and Health Center	Portland	Level I
- Oregon Health Sciences University	Portland	Level I
- Columbia Memorial Hospital	Astoria	Level III
- Hood River Memorial Hospital	Hood River	Level III
- Mid-Columbia Medical Center	The Dalles	Level III

PREHOSPITAL PROCEDURES

When a prehospital trauma verified service has identified a patient as a major trauma patient, the prehospital service should ensure the following:

1. Contact with Medical Resource Hospital (University Hospital, Portland, OR) for Level I access or the Level II Designated Trauma Center (Southwest Washington Medical Center), where available; or
2. The highest level of designated facility within the agency's immediate response jurisdiction if a Level I or Level II Trauma Center is not within a 30-minute response time. Contact by radio, cellular phone, telephone, or other means as conditions dictate.

When a non-trauma verified prehospital service has contact with a major trauma patient prior to the arrival or dispatch of trauma verified service(s) they shall ensure that:

- ◆ The appropriate 9-1-1 dispatch center is immediately notified so that trauma verified services can be activated.

ACTIVATING THE TRAUMA SYSTEM

Contact

To activate the Trauma System in the Southwest Region, contact with the appropriate designated Trauma Center shall be preceded with the phrase: "THIS IS A TRAUMA SYSTEM ENTRY." this alerts the trauma center that you have a potential 'major' trauma patient.

It is important for the EMS agency to provide the designated Trauma Center with the following information:

- A. Identification of the EMS agency or Trauma Verified Service
- B. Patient's chief complaint(s) or problem: identification of biomechanics and anatomy of injury.
- C. Approximate age of the patient
- D. Basic vital signs (palpable pulse rate, where pulse was palpated, ~~and~~ rate of respiration and blood pressure if obtainable).
- E. Level of consciousness (Glasgow Coma Score)
- F. Other factors that require consultation with the base station.
- G. Number of patients (if known)
- H. Estimated Time of Arrival
- I. Whether an air ambulance has been activated for scene, field, or hospital rendezvous.

MAJOR TRAUMA PATIENTS

When it has been determined that a patient meets the trauma inclusion criteria an orange Washington State Trauma Registry band should be attached to the patient's wrist or ankle as soon as possible. The number on the Trauma Registry Band shall be recorded on the medical incident report (by all prehospital agencies -- both first response and transport agencies) and in the hospital trauma registry database (by the Trauma Registrar at the hospital).

AIR AMBULANCE

Air ambulance shall be considered for use by prehospital agencies in the Southwest Region for major trauma patients when transport by air will reduce the overall out of hospital time to the most appropriate designated trauma center by 10 minutes or more. If the air ambulance is required, request 9-1-1 or your dispatch services to "ACTIVATE AIR AMBULANCE FOR A TRAUMA SYSTEM ENTRY." If you have Global Positioning System coordinates of your location, give these to your 9-1-1 Center and/or Dispatch Services so that they may relay them to the Air Ambulance Service. If you begin ground transport of the patient for rendezvous with an air ambulance service, notify the service of your intent to meet them at a location. Again, if the GPS of the rendezvous is known, give that location to the 9-1-1 center or dispatch service for relay to the air ambulance service.

It is highly recommended that all EMS services have predesignated rendezvous sites within their county and GPS coordinates for each site should be identified in advance. These GPS coordinates should be placed on a map inside each trauma verified vehicle that will respond to a major trauma patient. These maps should be readily available to each first responder, EMT, or paramedic using the vehicle.

PROLONGED TRANSPORT

When the transport of an major trauma will be greater than 30 minutes to a Level I or II Trauma Center but within 30 minutes of an lesser level facility, the highest level EMS provider on the scene should immediately contact on line medical control and request instructions as to whether the patient should be transported to a Level V, IV, or III center for stabilization or whether they should be transported directly to a Level I or Level II Trauma Center.

All information on "major" trauma patients shall be documented according to WAC and County Medical Program Director guidelines.

While enroute to the receiving facility, the transporting agency should provide a complete report to the receiving trauma center regarding the patient's status, and provide them with any further information that may be needed, including estimated time of arrival to their facility.

PEDIATRIC MAJOR TRAUMA PATIENTS

For a pediatric major trauma patient consideration should be given to transport the patient directly from the field (either by air ambulance or ground ambulance -- see above, Air Ambulance for guidance) to the most appropriate (Level I, II, III) trauma facility within the Region. In most cases, a pediatric major trauma patient will be transported to a Level I Trauma Center. However, other designated Trauma Centers, may offer initial stabilization of the pediatric patient. All level Trauma Centers in the Southwest Region shall follow their guidelines for diversion of pediatric patients directly from the prehospital setting based on the availability and potential need for surgical or medical subspecialty care or resources specific to the care of the pediatric patient. When a prehospital service notifies a Trauma Center that they have a major pediatric trauma patient, the Level II, III, IV, or V center should immediately notify the trauma designated EMS agencies of the diversion policy.

DIVERSION – TRAUMA CENTER(s) NOT ACCEPTING PATIENTS

Designated Trauma Centers in the Region will go on diversion for receiving major trauma patients based on the facilities' inability to provide initial resuscitation, diagnostic procedures, and/or operative intervention at the designated level of care.

Diversion will be categorized as partial or total based on the inability of the facility to manage specific types of major trauma or all major trauma at the time.

Trauma Centers shall consider diversion of major trauma patients when:

1. A Surgeon is unavailable
2. The OR is unavailable
3. The CT scanner is down (if Level II)
4. Neurosurgeon is unavailable if (Level II)
5. Emergency Department is unable to manage more major trauma; and/or
6. Other specific resources needed for care of a trauma patient are unavailable

Each designated Trauma Center will have a hospital-approved policy to divert patients to other designated facilities based on its ability to manage each patient at a particular time. A diversion log will be kept, indicating the time of diversion and the reason for partial or total diversion.

EMS agencies in the Southwest Region will be notified if and when a Trauma Center is on diversion status. Trauma verified services will follow their medical program director's guidelines on where trauma patients should be taken, in the event the closest or most appropriate trauma center is not accepting patients.

MPDs should develop diversion protocols for their respective counties.

MEDICAL PATIENTS

All EMS Agencies should follow their Medical Program Director's patient care protocols and/or guidelines for the care and transport of medical and non-major trauma patients. If it is unclear as to where a medical or non-major trauma patient should be transported, contact medical control at your nearest resource hospital for directions; otherwise follow off-line medical control of patients as outlined in your standing orders, patient care protocols, and/or guidelines provided by your Medical Program Director.

MPDs, in the development of their patient care protocols and/or guidelines for the care and transport of the medical and non-major trauma patient, shall consider:

- A. Patient's desire or choice of medical facility as to where they want to be transported and/or treated. Or, in the case of a unconscious patient, the wishes of the patient's family or personal physician.
- B. The type of treatment and the ability of a receiving hospital to treat such medical or non-major trauma (i.e., high risk OB patients, potential ICU/CCU patients, unstable co-morbid medical patients, etc.).
- C. Level, severity, and type of injuries.
- D. Ability of the receiving hospital to adequately treat the medical or non-major trauma patient.

In all cases, unless proper medical care dictates otherwise, the choice of the patient is paramount in the development of standing orders, patient care protocols, and/or guidelines for EMS transport agencies.

QUALITY ASSESSMENT AND IMPROVEMENT (QA&I)

Quality Assessment & Improvement (QA&I) is an integral component of the Southwest Region's Trauma System. For all patients, EMS and health care providers will follow their agency's specific QA&I plan. If an agency does not have a QA&I Plan, one should be developed and adopted. Issues that are deemed by the QA&I committee ~~board~~ for their review and recommendations should be submitted directly to the regional QA&I committee for consideration. QA&I prehospital problems, issues, case reviews, areas of improvement, can be "flagged" by checking the "QI" Box on the medical incident reporting form, available from the State EMS Office. Any system issues that affect patient care are encouraged to be submitted. Refer to SW Region QA&I plan for more information regarding QA&I for the region.

PATIENT CARE PROCEDURES - DISPATCH AND RESPONSE TIMES

STANDARD: DISPATCH

Dispatchers who operate a 9-1-1 Center in the Southwest Region should use a regionally approved medical priority dispatch program available from the Southwest Region EMS & Trauma Care Council. All dispatchers should be trained in a regionally adopted and medical program director approved emergency medical dispatch program (EMD) and be regionally certified as EMDs. Such persons who are not certified should be in a sixteen-hour in-house training program that provides them with the principles of EMD dispatch. EMDs should follow priority dispatch for major trauma patients.

EMDs should use the priority dispatch guidelines when dealing with a major trauma patient.

LEVEL OF SERVICE TO BE DISPATCHED

When a 9-1-1 Center receives a call that suggests to the emergency medical dispatcher (EMD) that a "major" trauma patient is involved, the EMD should dispatch the highest level of care that is generally available in the response area. First response trauma verified services, where available, should also be dispatched. In all counties in the Southwest Region, paramedics or the highest level of provider, specifically trained in prehospital trauma life support should be dispatched to the scene of a major trauma incident, when available.

The 9-1-1 Center should immediately notify both the first response service and the transport service that this is "a potential 'major' trauma patient response." It is the responsibility of the responding agency to have the appropriate trained prehospital trauma life support medical technicians respond to the scene. If prehospital agencies do not have resources available who are trained in prehospital trauma life support, the agency should immediately notify the 9-1-1 Center to dispatch a trauma verified service to the scene of the call to assist with the patient or patient(s). In all suspected "major" trauma patients, the nearest and highest level of EMS provider should be dispatched as part of the initial EMS response to any trauma patient. Ideally, this would be a paramedic service with trauma trained individuals on board.

DISPATCH OF NEAREST TRAUMA VERIFIED SERVICE

Response Systems

County 9-1-1 Centers should develop response systems to determine which nearest trauma /trauma verified first response and transport service should be dispatched to the scene of a major trauma incident or patient.

For all "major" trauma patients or 'suspected' major trauma patients, emergency dispatch agencies or 9-1-1 Centers shall dispatch trauma verified service(s) to the scene of the trauma incident in accordance with the dispatch system and compatibility of service providers.

In the instance where no trauma verified service is available, the 9-1-1 Center should dispatch the nearest available first response and/or ambulance service to the scene of the trauma incident with the highest level of care available.

If in doubt as to whether the incident being reported to the 9-1-1 Center involves a "major trauma patient," until notified otherwise by a paramedic or the highest level EMS provider on the scene, **ASSUME THE INCIDENT INVOLVES A MAJOR TRAUMA PATIENT** and dispatch according to this section of the Region's Patient Care Procedures. Remember that time is of the essence for major trauma patients.

RESPONSE MODE

If a major trauma patient is known or suspected, 9-1-1 Centers should advise all responding trauma services of any and all additional information that becomes available to the 9-1-1 center.

RESPONSE TIMES

To ensure timeliness in the dispatch of a trauma verified service, the following guidelines have been adopted by the Regional Council for response times (measured from the time the call is received by the responding agency until the time the agency arrives on the scene of the trauma incident):

First Response Trauma Verified Services (response times, 80 percent target)

Urban Areas: 4 minutes
Suburban Areas: 5 minutes
Rural: 12 minutes
Wilderness: within 60 minutes, but as soon as possible.

Transport Trauma Verified Services (response times, 80 percent target)

Urban Areas 8 minutes
Suburban Areas 15 minutes
Rural 35 minutes
Wilderness: within 60 minutes, but as soon as possible.

These response times apply to all trauma verified services in the Southwest Region, and apply to all major trauma patients.

INTERFACILITY TRANSFER/TRANSFER AGREEMENTS

All Level II (Southwest Washington Medical Center, Medical Center Campus, Vancouver), Level III (St. John Medical Center, Longview), Level IV (Ocean Beach Hospital, Ilwaco, WA; Skyline Hospital, White Salmon; and Klickitat Valley Hospital, Goldendale, WA), and Level V (none at present) designated trauma facilities shall have transfer agreements with Level I Trauma Centers (Emanuel Hospital and/or University Hospital) for the transfer of emergency medical and trauma patients, as necessary. Identification of patients who meet trauma transfer criteria shall be according to the Washington State recommended guidelines for Adult & Pediatric Trauma Transfer Criteria (See Appendix A)

All Interfacility transfers shall be in compliance with current EMTALA regulations and must be consistent with the Revised Codes of Washington (70.170.060(2)).

All Interfacility transfers of major trauma patients shall consider an air ambulance service where out of hospital times can be reduced by 10 minutes or more, or an appropriate level of trauma verified transport service, where transport can be appropriately handled by such a ground service (i.e., Southwest Washington Medical Center to University Hospital, for example), in all other cases.

PROCEDURES

Designated Trauma Centers shall have published adult and pediatric trauma transfer criteria available for use by the emergency department personnel (Appendix A).

INTERFACILITY TRANSFER OF A MAJOR TRAUMA PATIENT

When a major trauma patient must be transferred from a lower level Trauma Center to a higher level center (Level IV to Level I, for example), the transferring physician must contact the receiving physician who must accept the transfer of the patient prior to the patient leaving the sending facility.

The transferring physician and facility will ensure the appropriate level of care during transport of the major trauma patient to the receiving Trauma Center.

The receiving facility must accept or be available to accept the major trauma patient prior the patient leaving the sending facility.

The receiving facility will be given the following information on the patient by fax, phone, or other appropriate means:

- a. Brief History
- b. Pertinent physical findings
- c. Summary of any treatment done prior to the transfer
- d. Response to therapy and current condition

All appropriate documentation must be available at the receiving facility upon arrival of the patient to the receiving facility (it may be sent with the patient, faxed to the hospital, or relayed by other appropriate means).

The transferring physician's orders shall be followed during transport. Should the patient's condition change during transport, the pre-determined on-line or off-line medical control for the transporting agency shall be utilized.

Further orders may be given by the receiving physician.

MPD approved, or County protocols should be followed during transport, unless direct medical orders by the sending or receiving physician are given to the contrary.

All ground Interfacility transports must be conducted by a trauma-verified service for trauma system patients.

APPENDIX A - INTERFACILITY TRANSFER CRITERIA

All designated health care facilities shall have transfer agreements for the identification and transfer of trauma patients as medically necessary.

General Trauma Transfer Criteria

Patients from the following categories are at high risk for death or disability and shall be considered for transfer to a facility designated to provide Level I or Level II Trauma Care Services.

A. Central Nervous System

1. Head injury with (any I of the following):
 - (a) Open, penetrating, or depressed skull fracture
 - (b) CSF leak
 - (c) Severe coma (GCS < 10)
 - (d) Deterioration in GCS of 2 or more
 - (e) Lateralizing signs
2. Unstable spine
3. Spinal cord injury (any level)

B. Chest

1. Suspected great vessel or cardiac injuries
2. Major chest wall injury
3. Patients who may require protracted ventilation

C. Pelvis

1. Pelvic ring disruption requiring transfusions
2. Evidence of continued hemorrhage
3. Compound/open pelvic injury or pelvic visceral injury

D. Multiple system injury

1. Severe facial injury with head injury
2. Chest injury with head injury
3. Abdominal injury with head injury
4. Burns with head injury

E. Specialized Problems

1. Critical burns > 20% of body surface areas or involving airway;

F. Secondary Deterioration (late sequelae)

1. Patient requires mechanical ventilation

2. Sepsis
3. Organ system(s) failure (deterioration in CNS, cardiac, pulmonary, hepatic, renal, or coagulation systems)
4. Osteomyelitis

Pediatric Trauma Transfer Guidelines

(Adopted by the Governor's EMS & Trauma Care Steering Committee on July 19, 1995)

Consideration shall be given to early transfer of a child to the regional pediatric trauma center when required surgical or medical subspecialty care or resources are unavailable. These include, but are not limited to the following:

1. Hemodynamically stable children with documented visceral injury being considered for "observational" management. Although the efficacy of this approach in selected cases has been well documented, two significant caveats always apply:
 - a) Hemodynamic instability mandates immediate operative intervention, and;
 - b) Nonoperative care is safe only in an environment that provides both close clinical observation by a surgeon experienced in the management of childhood trauma and immediately available operative care.
2. Children with abnormal mental status. In all but the infant, outcome from closed head injury has been shown to be significantly better for the child than for the adult. Although the quality and timeliness of initial resuscitation are the most important determinants of outcome from brain injury, continued comprehensive management in specialized units with multi-disciplinary pediatric critical care teams may provide a more rapid and complete recovery.
3. Infants and small children. Severely injured infants and small children are the most vulnerable and, frequently, the least stable trauma victims. Because they require the special resources and environment of a regional pediatric Trauma Center, transfer should occur as soon as safely feasible.
4. Children with injuries requiring complex or extensive reconstruction. These services are traditionally most available in hospitals capable of functioning as a regional pediatric trauma center. It is especially important that children with impairments requiring long-term follow-up and supportive care have this provided or at least coordinated by the regional pediatric Trauma Center.

Follow-up of injury-related disability is an essential requirement of the regional pediatric Trauma Center's trauma registry.

5. Children with polysystem trauma requiring organ system support. This is especially important for those patients requiring ventilatory, cardiovascular, renal, or nutritional support. Because these problems usually occur synchronously and require precise interdisciplinary coordination, they are best managed in comprehensive facilities such as regional pediatric Trauma Centers.